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EXAMINER	
HINES, JANA A	

ART UNIT	PAPER NUMBER
1645	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/509,498	REIMANN ET AL.	
	Examiner	Art Unit	
	JaNa Hines	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 March 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Amendment Entry

1. The amendment filed March 30, 2009 has been entered. Claim 1 has been amended. Claim 7 is cancelled. Claims 1-6 and 8-12 are under consideration in this office action.

Response to Arguments

2. Applicant's arguments filed March 30, 2009 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The rejection of claims 1-6 and 8-12 under 35 U.S.C. 102(b) as being anticipated by Dalemans et al., (WO 99/30733) is maintained for reasons already of record.

Response to Arguments

4. Applicant's arguments filed March 30, 2009 have been fully considered but they are not persuasive.

Applicants assert that Dalemans et al., do not anticipate the claims because the claims now recite one adjuvant which a is mineral-based, negatively charged adjuvant.

Applicants point the inclusion of polycaprolactone and argue that it is an additional adjuvant. However Dalemans et al., clearly state that polycaprolactone or poly (lactide-co-glycolide) provide a hermetic layer; i.e., are airtight or impervious to air and thereby act as encapsulating agents. See also Page 10, lines 18-27. Contrary to applicants' assertion that the polymers are adjuvants, Dalemans et al., clearly state that the polymers "prevent antigen liberation for a period of time..." Dalemans et al., do not state that the polymers enhance immunological activity. Furthermore, Dalemans et al., do not recite the polymers under the adjuvant section. Instead Dalemans et al., disclose the polymers use a delayed release formulations, under the section entitled Formulations and disclose additional formulations of delivery systems. Thus, applicants arguments about the use of polymers, which merely encapsulate and act as delivery systems is not persuasive, since Dalemans et al, do not teach the polymers as additional adjuvants.

Next Applicants assert that because Dalemans et al., recite an example of a combination of adjuvants, then Dalemans et al., only teach using a combination of adjuvants. However, it is noted that Applicants omitted the relevant teachings on that same where Dalemans et al., teach adjuvants not used in combination. Dalemans et al., clearly and specifically recites that suitable adjuvants, not in combination include aluminum salt such as aluminum hydroxide gel (alum), aluminum phosphate or algammulin, but may also be a salt of calcium, iron or zinc; beginning at page 9, lines 23. Furthermore, Dalemans et al., teach the protein antigen being adsorbed to alum (page 11, lines 3-6). Finally, in Example 9, Dalemans et al., recite administration of

both DNA and the protein antigen further including alum, as the one mineral-based negatively charged adjuvant. Therefore repeatedly Dalemans et al., teach the inclusion of one mineral-based negatively charged adjuvant, contrary to applicants' assertions.

Applicants are reminded that a reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. *Merck & Co. v. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). Therefore applicant's argument is not persuasive especially when considering that Dalemans et al., disclose recite administration of both DNA and the protein antigen further including alum, as the one mineral-based negatively charged adjuvant. Therefore Dalemans et al., specifically and clearly discloses all the elements of the claim within the four corners of the document as arranged by the instant claim.

Applicants argue Dalemans generally teaches mineral-based adjuvants including aluminum phosphate which is negatively charged, but only in the context of combining the mineral-based adjuvant with a lipid or polymer. Thus, Applicants admit that Dalemans et al., teach one adjuvant, which is a mineral-based, negatively charged adjuvant.

Applicants argument that Dalemans et al., teach one mineral-based adjuvants including aluminum phosphate which is negatively charged, but only in the context of combining the mineral-based adjuvant with a lipid or polymer, is not persuasive.

The argument is not persuasive because the claim language recites "comprising." The transitional term "comprising" is inclusive or open-ended and does not

exclude additional, unrecited elements or method steps. See, e.g., *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). Therefore applicants' argument that Dalemans et al., is not obvious because it discloses exactly the same immunogenic composition with additional reagents is not persuasive since Dalemans et al., teach a composition and method with the same components; thus the rejection is maintained.

Applicants assert that in view of the unexpected results, i.e., that the present invention is based on the surprising finding that negatively-charged, mineral- based adjuvants (aluminum phosphate) further improve the enhancement of the immunogenicity of DNA vaccines by pre-incubation with a protein antigen. Contrary to Applicants assertion of unexpected results, it appears that the results are not based on preincubation, but the rather the formulations of a single vaccine. In fact, the specification the key point is that the vaccine delivery strategy according to the present invention supports the formulation of a single vaccine composed of very different types of vaccine constructs that prime *in situ* a diverse spectrum of immune 15 responses differing in specificity and in the repertoire of specific effector functions they can

mediate, i.e., a differentiated Th1 to the DNA encoded antigen, including a CTL response, and a Th2 response to the protein antigen. Thus applicants' allegations of unexpected results are not persuasive and the rejection is maintained.

Applicant argues that Dalemans et al., teach away from the claimed invention because examples 1-7 do not use adjuvants. It is the position of the Office that Dalemans et al., states "the polynucleotides, polypeptides and polynucleotide + polypeptide mixture (complex) of the present invention, when adjuvanted, are preferably adjuvanted in the formulation of the invention" (page 9, lines 18-20). Dalemans et al., then provides a long list of suitable adjuvants. Therefore, applicants' assertion that Dalemans et al teach away from the use of adjuvants is not persuasive especially when Dalemans et al., teach the use of the exact same adjuvants, aluminum salt such as aluminum hydroxide gel (alum), aluminum phosphate or algammulin, but may also be a salt of calcium, iron or zinc, mineral-based negatively charged adjuvants disclosed by applicant. Furthermore, Applicants have already conceded that Dalemans et al., teach mineral-based negatively charged adjuvants.

Furthermore, it is the examiner's position that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994). The invention was directed to an epoxy impregnated fiber-reinforced printed circuit material. The applied prior art

reference taught a printed circuit material similar to that of the claims but impregnated with polyester-imide resin instead of epoxy. The reference, however, disclosed that epoxy was known for this use, but that epoxy impregnated circuit boards have "relatively acceptable dimensional stability" and "some degree of flexibility," but are inferior to circuit boards impregnated with polyester-imide resins. The court upheld the rejection concluding that applicant's argument that the reference teaches away from using epoxy was insufficient to overcome the rejection since "Gurley asserted no discovery beyond what was known in the art." 27 F.3d at 554, 31 USPQ2d at 1132. Therefore contrary to applicants' argument, the prior art does not teach away from the instant claims.

Again, Applicants point the inclusion of polycaprolactone and argue that it is an additional adjuvant. As previously stated Dalemans et al., clearly state that polycaprolactone or poly (lactide-co-glycolide) provide act as encapsulating agents to prevent antigen liberation for a period of time. Dalemans et al., do not state that the polymers enhance immunological activity; or recite the polymers as being adjuvants. Thus, applicants arguments about the use of polymers, is not persuasive, since Dalemans et al, do not teach the polymers as additional adjuvants.

Applicants continue to make arguments about the Th1 and Th2 responses. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., both a Th1 and Th2 response are elicited, directed against the antigen encoded by the DNA component or the protein component) are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification

are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Therefore, applicants' argument is not persuasive.

Applicants argue that the vaccine formulations are structurally different from vaccine formulations in which the adjuvant has not been pre-incubated; however it is noted that t that the features upon which applicant relies i.e., vaccine formulations in which the adjuvant has been pre-incubated are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Rather the claims recite preincubating or subsequently mixing the adjuvant. Furthermore paragraph [0035] states that when the adjuvant is delivered in conjunction, e.g., pre-incubated or pre-mixed with the protein, there is a different appearance. However it is noted that Dalemans et al., teach the protein antigen being adsorbed to alum. Therefore, Dalemans et al., teach adjuvant is delivered in conjunction, e.g., pre-incubated or pre-mixed with the protein; therefore it appears that the formulation is disclosed.

Applicants argue that the aluminum hydroxide of Dalemans et al., is not equivalent to the aluminum phosphate and aluminum hydroxyphosphate of the instant application. However it is noted that the claims merely require a mineral-based negatively charged adjuvant, and claim 2 states that the adjuvant be an aluminum or calcium salt. Dalemans et al., teach Dalemans et al., teach the use of the exact same adjuvants, aluminum salts, such as aluminum hydroxide gel (alum), aluminum phosphate or algammulin, or a salt of calcium. Thus, applicants' arguments are not

persuasive since the claims do not require only aluminum phosphate and aluminum hydroxyphosphate. Furthermore the argument is not persuasive, since Dalemans et al., teaches both aluminum and calcium salts, and specifically recites aluminum phosphate.

In closing, Applicants assert Dalemans does not teach a single negatively charged mineral-based adjuvant. As stated above, the Office proves that Dalemans et al., clearly and specifically recite suitable adjuvants, including aluminum salt such as aluminum hydroxide gel (alum), aluminum phosphate or algammulin, and salts of calcium, iron or zinc; beginning at page 9, lines 23.

Applicants assert Dalemans et al., teach mineral-based adjuvants in combination with a second adjuvant by the inclusion of polycaprolactone polymer. As previously recited, the Office proves Dalemans et al., clearly state that polymers provide a hermetic layer to act as encapsulating agents. Dalemans et al., do not state that the polymers enhance immunological activity nor do Dalemans et al., recite the polymers under the adjuvant section, which recites a list of mineral-based negatively charged adjuvants.

Applicants assert that Dalemans does not exemplify use of negatively charged adjuvants. As stated above, Dalemans et al., clearly recites the use of alum, as the one and only mineral-based negatively charged adjuvants within the immunogenic composition.

Applicants assert that Dalemans does not distinguish between negatively- and positively- charged adjuvants. However, as previously stated, Dalemans et al., does not

recite the whether an adjuvant is positive or negatively charged when one of ordinary skill can simply determine the charge. Furthermore Dalemans et al., discloses and uses the same mineral-=based negatively charged adjuvants as disclosed by the instant specification.

Applicants argue that Dalemans teach a vaccine composition that is structurally different from the vaccine compositions of the prior art as indicated by its different physical appearance. However it is noted that no Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Therefore none of applicants' arguments are not persuasive and the rejection is maintained.

Conclusion

7. No claims allowed.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ja-Na Hines whose telephone number is 571-272-0859. The examiner can normally be reached Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Robert Mondesi, can be reached on 571-272-0956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/JaNa Hines/
Examiner, Art Unit 1645

/Mark Navarro/
Primary Examiner, Art Unit 1645